MEMORY CARD, ETC. JPEG JPEG V PROCESSING 2ND DATA-ORDER TRANSFORMING UNIT DISTORTION CORRECTING RANGE CALCULATING UNIT DISTORTION CORRECTION PROCESSING UNIT ϕ IMAGE PROCESSING CIRCUIT 5 **FRAME MEMORY** 1ST DATA-ORDER TRANSFORMING UNIT CPU PRE-PROCESSING CIRCUIT CCD

FIG. 1

LATER-STAGE BLOCK CORRECTION PROCESSING UNIT INTERPOLATION CALCULATING UNIT -85 83 82 MEMORY CONTROL UNIT INNER MEMORY UNIT 813 SELECTOR CONTROL REGISTER (X', Y') -812 INTERPOLATION-POSITION GENERATING UNIT DISTORTION-CORRECTION COORDINATE TRANSFORMING UNIT (X, Y) PREVIOUS-STAGE BLOCK

FIG.2

FIG.3

FIG.4

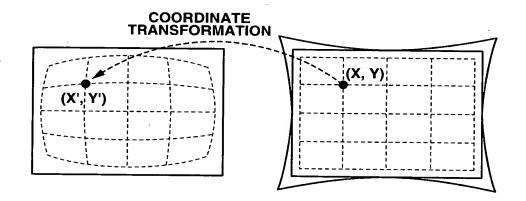


FIG.5

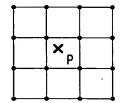


FIG.6

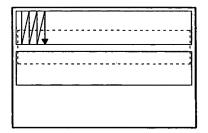


FIG.7

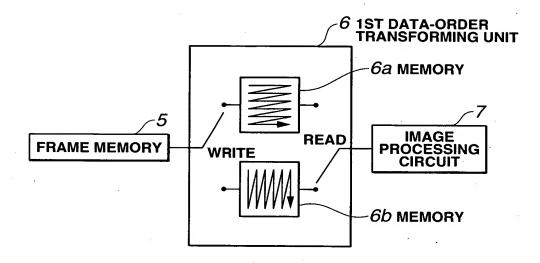
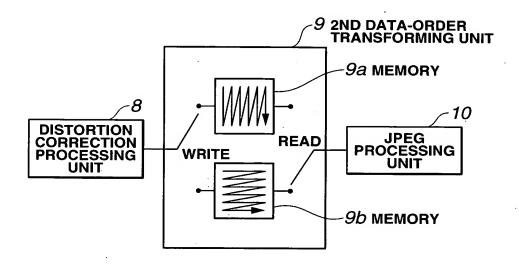


FIG.8



1

FIG.9

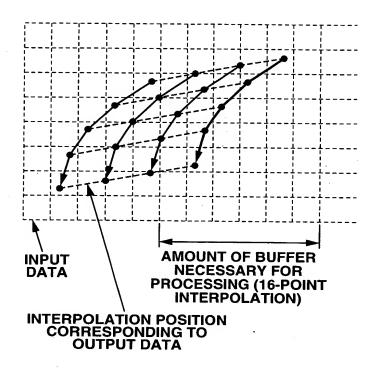


FIG.10

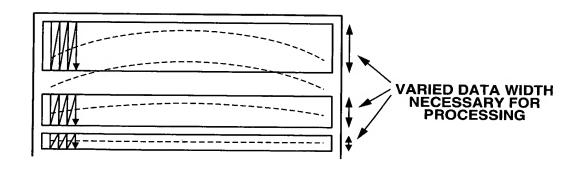


FIG.11

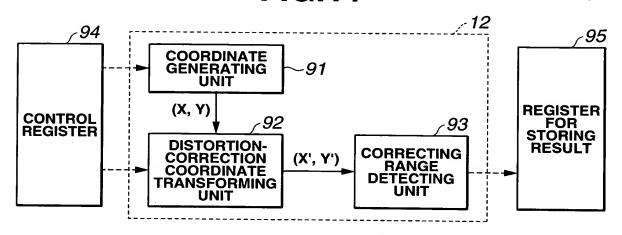


FIG.12

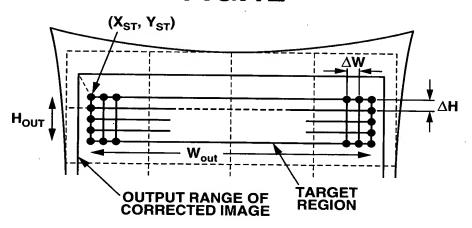


FIG.13

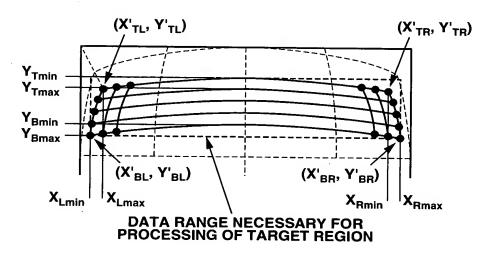


FIG.14

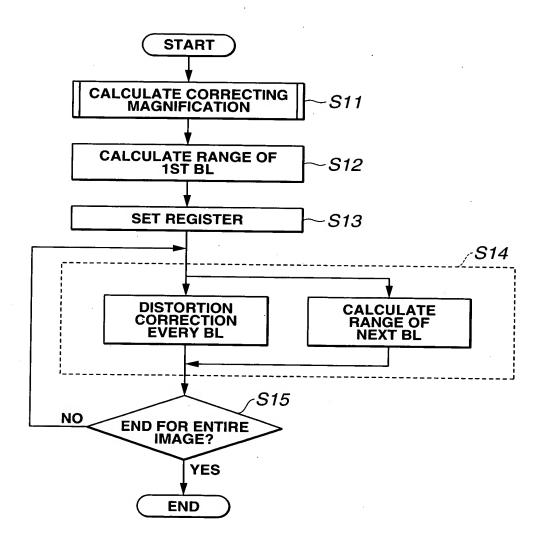
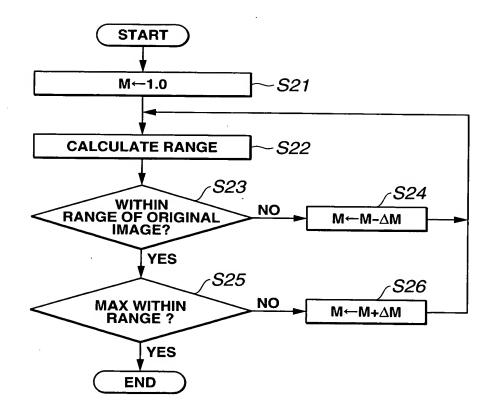


FIG.15



REGISTER FOR STORING RESULT CORRECTING RANGE DETECTING UNIT -93 CORRECTING COORDINATE CALCULATING UNIT 925 924 MULTIPLIER CONTROL UNIT 2 MULTIPLIER 2 Ø ~923 -922 MULTIPLIER CONTROL UNIT 1 CONTROL REGISTER MULTIPLIER ರ β >--921 CALCULATING χ, 3 -91 COORDINATE GENERATING UNIT

FIG. 16

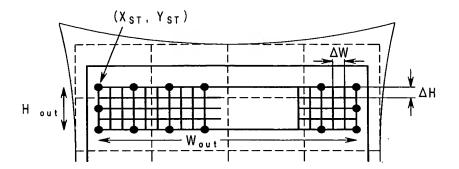
FIG.17

X, Y:	X, Y			 				X, Y	
α:		Z ²]	Z ⁴		Z ⁶]	I	Z ²
β:	[]	Z ²]	Z ²]			<u> </u>	Z ²
γ:			Z ⁴	<u> </u>	Z ⁶			<u> </u>	
δ:	[]	Α		В		С]		Α
ε:	;		AZ ²	[BZ ⁴		CZ ⁶	I	
X', Y':			,					X', Y'	
(CLK)	1	2	3	4	5	6	7	8	9

- TIME

x, Y :	×,≺	X, Y X, Y X, Y	,×							×, ≺	X, Y X, Y	× ×
: ¤		Z ₂	Z ²	Z ²	7	Z	Z ⁴	ş Z	Ze	Ze	\mathbf{Z}^2	7,
β:		Z ₂	$\int \mathbf{Z}^2$	Z ²	Z ₂	Z ₂	Z ₂				Z ²	\mathbf{Z}^2
λ:			Z	Z	7	Z	₉ Z	₉ Z				7
δ:			4			6			ပ			A
:: ::			AZ ²	AZ ²	AZ ²	BZ ⁴	BZ ⁴	BZ ⁴	₂ Z2	رکړ ا	°Z2	AZ ²
X, Y:										Χ', Υ	×,×	,× ×
(CLK)	-	2	က	4	2	9	7	8	6	10	11	12

FIG.19



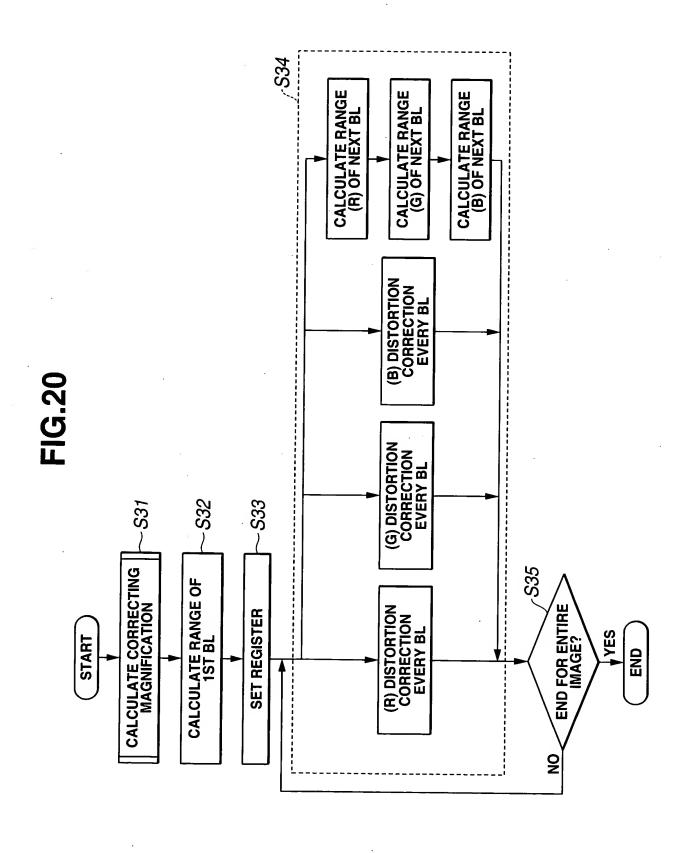


FIG.21

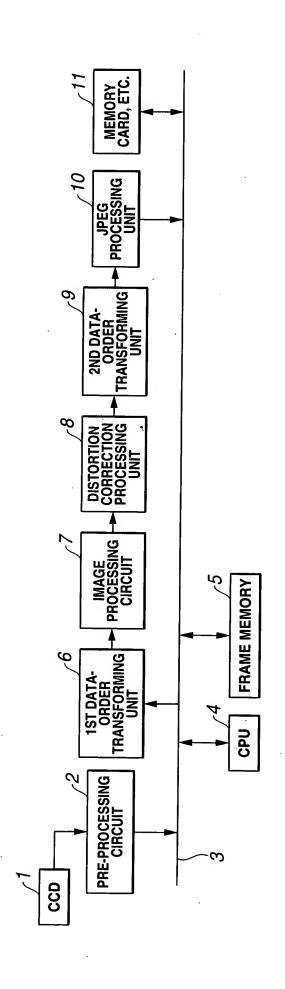


FIG.22

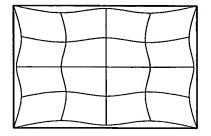


FIG.23

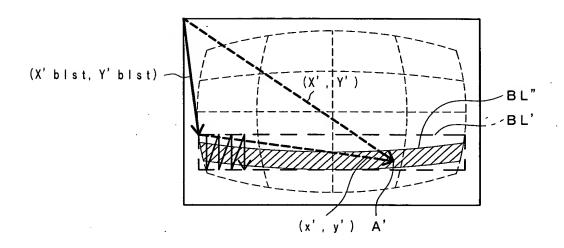


FIG.24

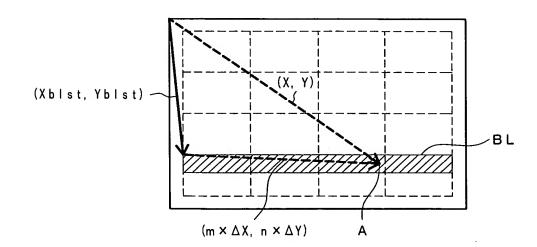
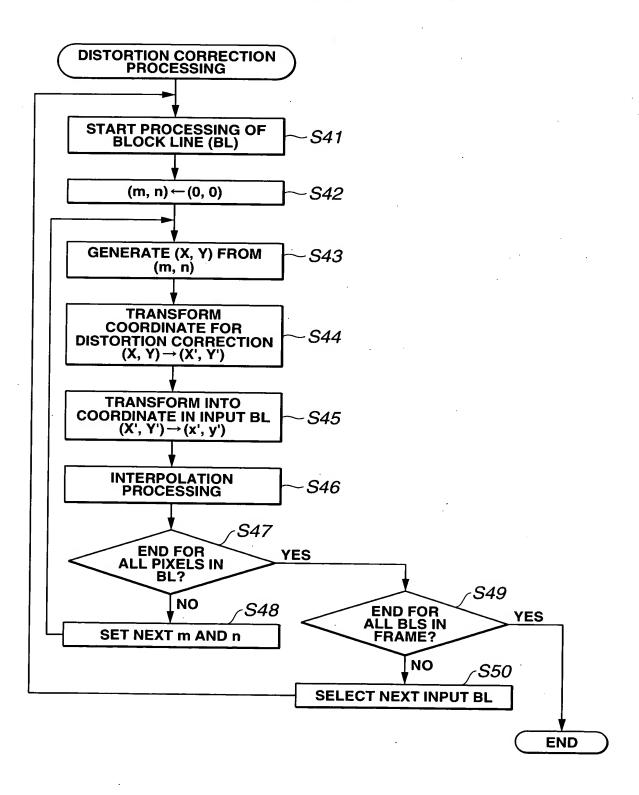
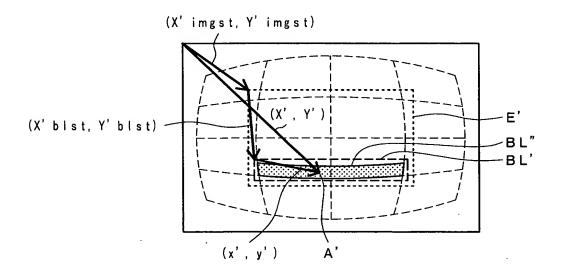


FIG.25





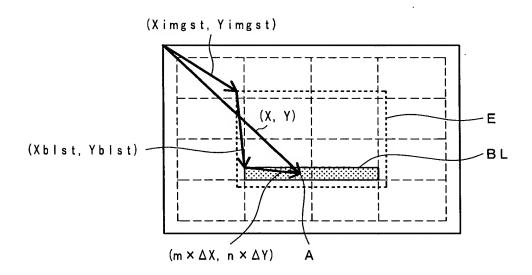
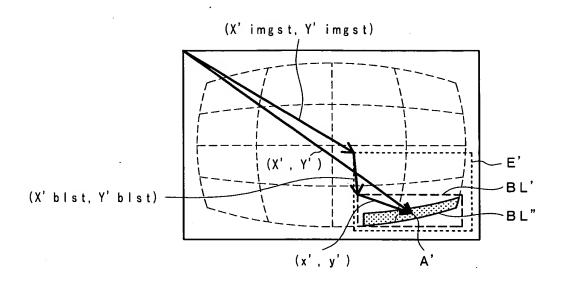


FIG.28



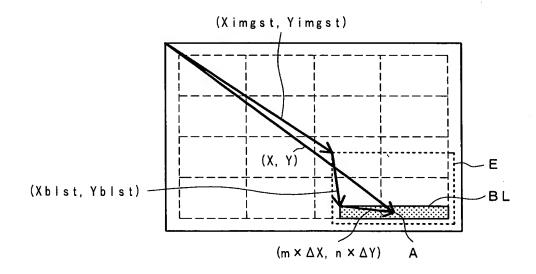


FIG.30

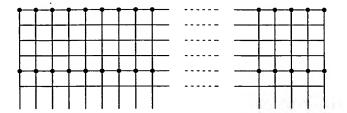


FIG.31

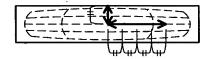


FIG.32

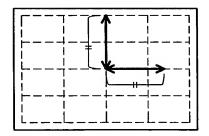


FIG.33

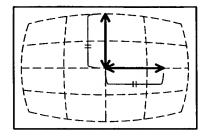


FIG.34

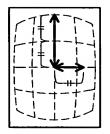


FIG.36

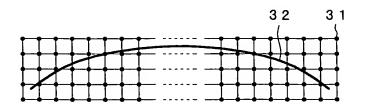
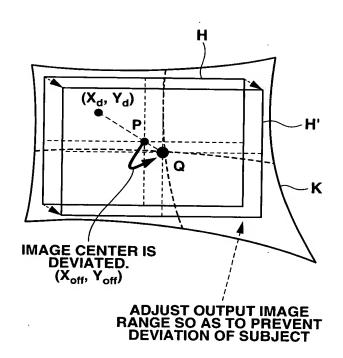
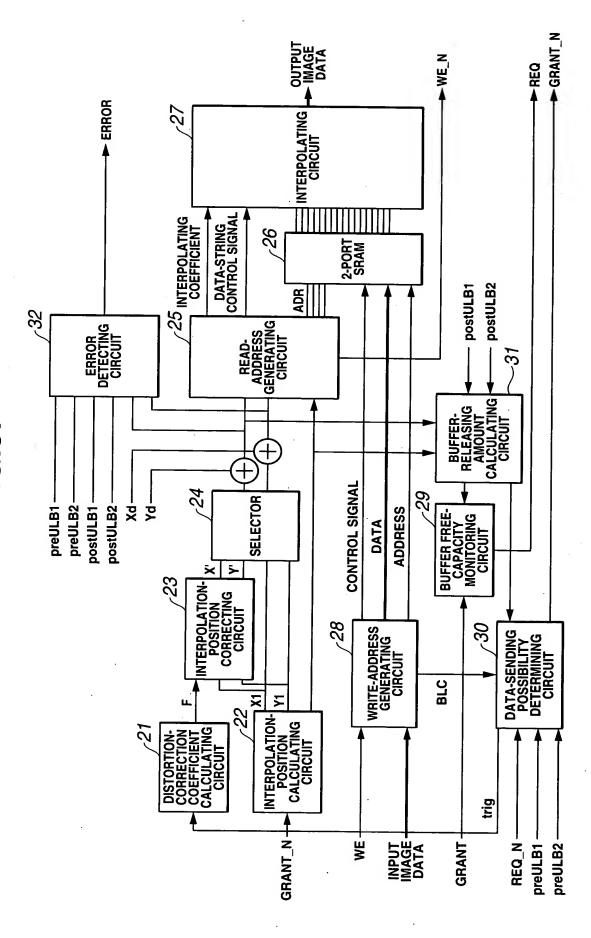


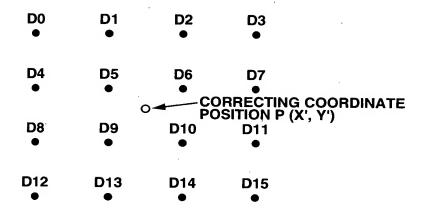
FIG.35





IG.37

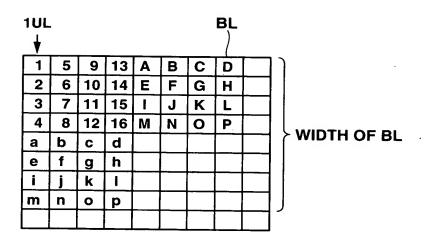
FIG.38

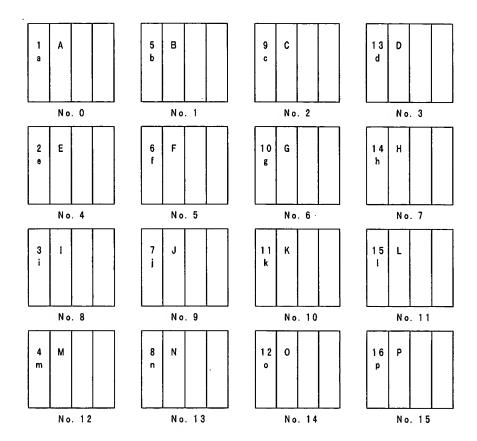


ORDER OF INPUT UL (N: INTEGER)

									•			-				•					
		4	N _, +4		4N	+12	41	V+5		4N	+13	41	V+6		4N	+14	41	V+7		4N-	+15
		4N	4	4N+	8 🖌	4	N+1	4.	4N+	9 🖌	4	N+2	₹4	N +1	10 🖌	41	N+3	14	N+	11 🌡	
ADDRESS	0 1 2	0 4 8	0 4 8	0 4 8	0 4 8		0 4 8	0 4 8	0 4 8	0 4 8		0 4 8	0 4 8	0 4 8	0 4 8		0 4 8	0 4 8	0 4 8	0 4 8	
	23	92	92				92	92	92	92		92	92	92	92		92	92	92	92	!
			No	. 0				No). 1					. 2		ı		No			
	0	1	1	1	1		1	1	1	1		1	T 1	1	1	1	1	4	4		
	0 1 2	5	5	5 9	1 5 9		5 9	5 9	1 5 9	5 9		5 9	5 9	1 5 9	5 9		5 9	5 9	5 9	1 5 9	
	23	93	93		93		93		93	93		93		93	93		93	93	93	93	
·			No	. 4				No	. 5				No	. 6				No	. 7		
	0 1 2	2 6 10	2 6 10	2 6 10	2 6 10		2 6 10	2 6 10	2 6 10	2 6 10		2 6 10	2 6 10	2 6 10	2 6 10		2 6 10	2 6 10	2 6 10	2 6 10	
	23	94	94	94	94		94	94	94	94		94	94	94	94		0.1	94	04	04	
		نت	No		نٽ		نٽ	No		<u> </u>		_	No.		37)	ı		No.		34)	
	0 1 2	3 7 11	3 7 11	3 7 11	3 7 11		3 7 11	3 7 11	3 7 11	3 7 11		3 7 11	3 7 11	3 7 11	3 7 11		3 7 11	3 7 11	3 7 11	3 7 11	
	23	95			95		95			95	l	95	_		95	.	95		_	95	
			No.	12			1	No.	13				No.	14			1	No.	15		

FIG.40





ex. INTERPOLATION POSITION=(4N+10+ α_{0} , 50+ α_{1}) (α_{*} : DECIMAL)

4N+4 4N+12	4N+5 4N+1	3 4N+6 4N+1	A ANI 7 ANI 45
4N ↓4N+8 ↓	4N+1	3 4N+6 4N+1 4N+2 4N+10 ✓	4 4N+7 4N+15 4N+3 4N+11 ✓
12 48 48 48 48 13 52 52 52 52 14 56 56 56 56	48 48 48 48 52 52 52 52 56 56 56 56	48 48 48 52 52 52 56 56 56 56	48 48 48 48 52 52 52 52 56 56 56 56
No. 0	No. 1	No. 2	No. 3
 12 49 49 49 49 13 53 53 53 53 14 57 57 57 57	49 49 49 49 53 53 53 53 57 57 57	49 49 49 49 53 53 53 53 57 57 57	49 49 49 49 53 53 53 53 57 57 57
No. 4	No. 5	No. 6	No. 7
12 50 50 50 50 13 54 54 54 54 14 58 58 58 58	50 50 50 50 54 54 54 54 58 58 58 58	50 50 50 50 54 54 54 54 58 58 58	50 50 50 50 54 54 54 54 58 58 58 58
No. 8	No. 9	No. 10	No. 11
12 51 51 51 51 13 55 55 55 55 14 59 59 59 59	51 51 51 51 55 55 55 55 59 59 59 59	51 51 51 51 55 55 55 55 59 59 59 59	51 51 51 55 55 55 55 59 59 59 59
No. 12	No. 13	No. 14	No. 15

READ ADDRESS TO MEMORY

No. 5, 6, 7, 9, 10, 11, 13, 14, 15 : 60 (=24 * 2+12)

No. 4, 8, 12:84 (=24 * 3+12)

No. 1, 2, 3 : 61 (=24 * 2+13)

No. 0: 85 (=24 * 3+13)

FIG.43

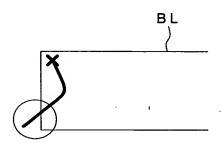


FIG.44

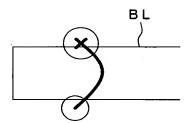


FIG.45

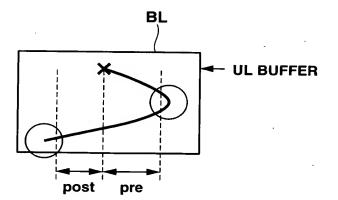


FIG.46

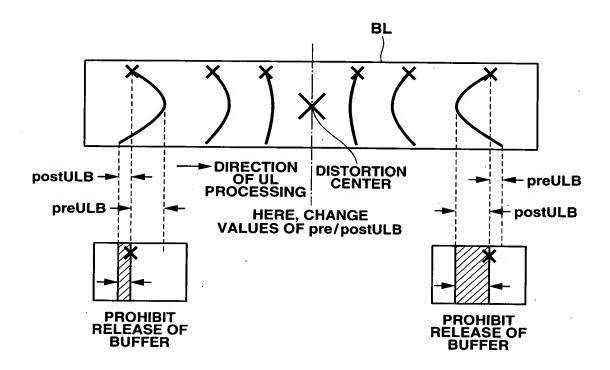


FIG.49

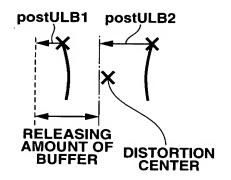


FIG.47

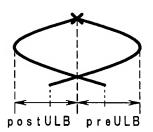


FIG.48

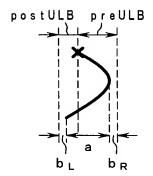


FIG.50

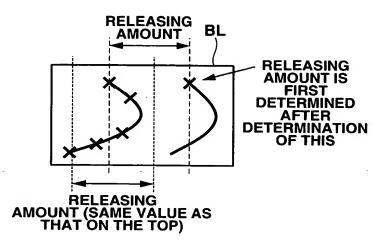


FIG.51

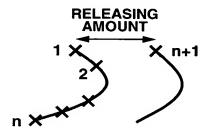
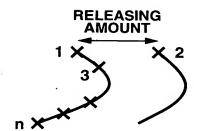


FIG.52

ÚĽ1 ÚĽ2	ÚĽ3	ÚL4
---------	-----	-----

FREE PROCESSING



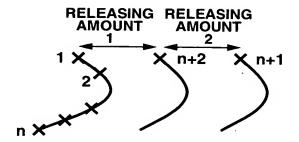




FIG.56

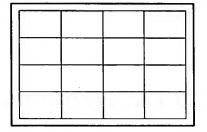


FIG.57

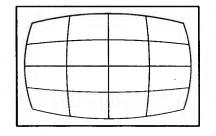


FIG.58

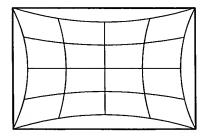


FIG.59

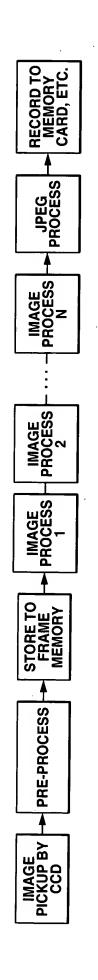


FIG.60

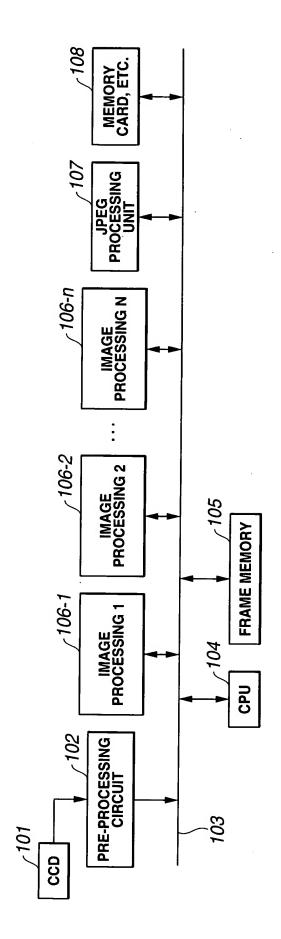


FIG.61

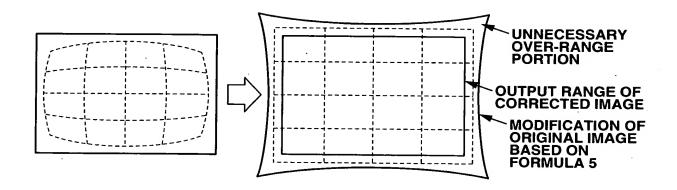


FIG.62

